JOSSELYN VAN TYNE MEMORIAL LIBRARY
WILSON ORNITHOLOGICAL SOCIETY

# AVICULTURAL MAGAZINE

MUSEUM
QL
671
A95

## CONTENTS


| | PAGE |
|---|---|
| An Experiment in Puffinculture (*with plate*), by WILLIAM G. CONWAY | 1 |
| The Trade in and Transport of Birds | 5 |
| Some Observations on the Cacatuinae—The Cockatoos, by E. N. T. VANE | 9 |
| Breeding of the Snowy Owl (*with plate*), by H. POULSEN | 17 |
| Bird News from Clères and Los Angeles, by J. DELACOUR | 18 |
| Some Results with Colour Feeding of Carotenoids in Birds at the Basel Zoological Garden, by HANS WACKERNAGEL | 20 |
| The Ornamental Pheasant Registry | 21 |
| The Exchange and Mart Scheme | 23 |
| London Zoo Notes, by J. J. YEALLAND | 23 |
| British Aviculturists' Club | 24 |
| News and Views | 25 |
| Reviews | 29 |
| Correspondence | 30 |


VOL. 65 No. 1 PRICE 5/- JANUARY–FEBRUARY 1959

# THE AVICULTURAL SOCIETY

Founded 1894

**President: D. Seth-Smith, Esq.**

**Hon. Secretary and Treasurer: A. A. Prestwich,** 61, Chase Road, Oakwood, London, N. 14.

**Assistant Secretary: Miss Kay Bonner.**

Membership Subscription is £1 per annum, due on 1st January each year, and payable in advance. Life Membership £15. Subscriptions, Changes of Address, Names of Candidates for Membership, etc., should be sent to the Hon. Secretary.

# THE AVICULTURAL SOCIETY OF AMERICA

**Hon. President: Mr. Jean Delacour.**

**President: Mr. Thomas J. Brinker.**

**Secretary: Mr. Otis Wade,** 1806 Redesdale Avenue, Los Angeles 26, Calif., U.S.A.

The annual dues of the Society are $2.50 per year, payable in advance. The Society year begins 1st January, but new members may be admitted at any time. Members receive a monthly bulletin. Correspondence regarding membership, etc., should be directed to the Secretary.

# THE AVICULTURAL MAGAZINE

The Magazine is published bi-monthly, and sent free to all members of the Avicultural Society. Members joining at any time during the year are entitled to the back numbers for the current year on the payment of subscription. All matter for publication in the Magazine should be addressed to:—

**The Editor: Miss Phyllis Barclay-Smith,** 51 Warwick Avenue, London, W.9. Telephone: Cunningham 3006.

The price of the Magazine to non-members is 5s., post free, per copy, or £1 10s. for the year. Orders for the Magazine, extra copies and back numbers (from 1917) should be sent to the publishers, Stephen Austin & Sons, Ltd., Caxton Hill, Ware Road, Hertford, England. Telephone: Hertford 2352/3/4.

*Copyright*] [*New York Zoological Society*

PUFFIN, *Fratercula arctica arctica* (LINNAEUS), USING WINGS AND FEET SWIMMING IN TANK. (Weight 300–430 grams.) Immature, about $4\frac{1}{2}$ months old.

*Copyright*] [*New York Zoological Society*

PUFFIN, *Fratercula arctica arctica* (LINNAEUS). IMMATURE, APPROXIMATELY 45 DAYS OLD. Weight 197 grams. (Notice down and lack of development of beak.) [*Frontispiece*

# AVICULTURAL MAGAZINE

THE JOURNAL OF THE AVICULTURAL SOCIETY
AND THE AVICULTURAL SOCIETY OF AMERICA

Vol. 65.—No. 1.—*All rights reserved.* JANUARY-FEBRUARY, 1959

## AN EXPERIMENT IN PUFFINCULTURE

By WILLIAM G. CONWAY

(Curator of Birds, New York Zoological Society, U.S.A.)

Scarcely an aviculturist exists who has not some idea of what a puffin is, but very few have ever seen one exhibited in captivity, and until August, 1957, we had never exhibited a puffin at the New York Zoological Park.

Three species of puffins are recognized: the Atlantic Puffin (*Fratercula arctica*), ranging from northern Greenland and Franz Josef Land south to Maine and Portugal; the Horned Puffin (*Fratercula corniculata*), breeding from the Bering Sea south to Forrester Island, Alaska, and the Tufted Puffin (*Lunda cirrhata*), found from northern Alaska and Siberia south to California and Japan. Our experience concerns the race *Fratercula a. arctica*, found from southern Greenland and Iceland to Maine and northern Norway. Lockley places the population of all races of the Atlantic Puffin at more than 15,000,000 and concludes that it is one of the most numerous of all Atlantic sea birds. Of this number we claim two, and their story follows.

Atlantic Puffins are rounded, compact, extraordinarily tough birds with a body about a Rock Dove and a half in size. During much of the year they present a drab appearance: black with a white breast and grey face. The beak is high and laterally compressed but not especially distinguished. With the advent of the breeding season all this changes. The orange feet become brilliant scarlet and a horny sheath grows over the bill, resulting in a huge affair which appears to start at the top of the puffin's head and extends to the lowest extremity of his short, round face. At this time, also, a fleshy, grey, wattle-like triangular projection grows above the puffin's eye, while below it a grey rectangle appears. The puffin's eyelids seem to swell somewhat and ring the eye with a bright circle of red.

In the wild, puffins feed very largely on small fish of several species.

They have attained considerable fame from their habit of returning to the nest with a number of small fish held in neat formation, crosswise in the bill. In contrast to some published accounts, however, not all of these fish have their heads pointing in the same direction. How the puffin manages to catch one fish and hold it so securely while obtaining another is the problem. Actually, the puffin has considerable control over both mandible and maxilla, and an elastic, heavy " lip " at the corners of its mouth helps give it a very facile food-gathering apparatus. While hard to describe, it is not hard to see how a puffin can hold one fish in the back of its beak and catch more in front.

Puffins nest in burrows and it is possible that they never see their parents clearly, for the " puffling " stays in the burrow, which is usually quite extensive and dark, and the parents walk down into the burrow to feed it. Instead of helping, or even driving the youngster from the nest, R. M. Lockley has shown that parent puffins merely taper off in their feeding visits and finally abandon the youngster altogether while it is still in the nest. This usually takes place about the fortieth day of the chick's existence. After about ten days of enforced fasting, the complaining chick leaves its nest burrow one night and makes its way on foot to the sea. There it enters the water and swims out on to the open ocean. Quite alone, it receives no help or further feeding from its parents. Fifteen million puffins would seem sufficient testimony that the puffin is well enough equipped by nature to learn to live in one of the world's most rigorous environs by itself.

On 30th August, 1957, we received a small shipment of puffins through the efforts of Mr. Stuart Peters, of Canada. Our purpose was to conduct an experiment with these birds to gain experience with their needs in captivity and to find a practical method of keeping them with an eye toward the development of a future " Puffinry ". Work in various other zoos in the United States and abroad did not appear encouraging. Hediger related the loss of puffins in Basle, and we were acquainted with several other attempts to keep the species, most of which did not end well. We hoped that nestlings, taken about the time of the fast period and properly handled, would have a good chance of survival. Accordingly, Mr. Peters collected a group of nestlings and placed them in a plane late one night and the next afternoon we had a dozen puffins. I should like to be able to say that we reared them without trouble, and one just does thus and so. Such is not the case. All but four of the puffins were dead within 30 hours of arrival. Each bird was very carefully autopsied but no certain cause of death was established. Every bird appeared in excellent condition with much surplus fat. Even on arrival the birds had appeared in excellent health and, to date, we do not have a

good hypothesis for their death. The puffins were at somewhat different stages of development, ranging from almost completely downy specimens to well-feathered birds. The four survivors of this holocaust were a mixture of the age groups represented, thus precluding the development of possible explanations on the basis of age. We concluded that puffins do not ship well under the conditions provided and decided we would be wise to " break them off " at the point of capture.

The four remaining birds immediately became the chief centre of interest and feeding problem in the Bird Department. Force-feeding the older examples proved a formidable job indeed, and we soon found that small, whole fish were the only answer. After a week, however, they began picking up these minnow-sized fish from small dishes of water themselves, and it appeared that our problems were mostly those of supply and demand. We found the birds sensitive to interruption such as movement and noise, and at various times had to stop carpenter repair jobs which occasioned pounding nearby. We attempted to induce the chicks to take fish injected with vitamin supplements with more or less success.

During this period of their lives our birds were kept in the head keeper's office within a special wire-floored cage with movable partitions. Each bird was housed separately and the appearance of this unit was rather like that of a multiple brooder. We felt individual compartments, offering a small area with enclosed back, top, and sides, might promote a greater sense of security to burrow nestlings.

From the brooder we intended to move the young puffins to our specially constructed refrigerated penguin quarantine cage with concrete pool as soon as we considered them well started on their food and the younger individuals well feathered. Crowded conditions and some unexpected problems on the waterfowl ponds made it necessary to house sea ducks in the cooler, and thus prevented us from moving our young puffins at an appropriate time. Not until October was the cooler free for use, and by this time three of the four puffins showed unmistakable signs of distress.

Breathing heavily, feeding but gradually losing weight, the puffins displayed symptoms frequently associated with aspergillosis. The first bird died on 11th October. Autopsy revealed aspergillosis and results were the same with yet another bird on 26th October. The two remaining puffins were placed in our cooler, one showing considerable distress. This bird and its apparently healthy cage mate were once again subjected to constant force-feedings to avoid the inevitable period of starvation stress while they learned to find their food in new surroundings. In the meantime, their food had been changed to one more practical for the zoo to obtain and considerably more economical than the various minnow-sized fish which we had been

using. Smelts, whole, such as fed our smaller penguins, were found satisfactory despite their 4 in. to 6 in. size. We placed a few drops of a multi-vitamin preparation on each fish. The ill bird was force-fed daily through the first week in November. Eventually it became so tame that it would sit upon its keeper's lap while being fed. Amazingly, this bird recovered. While this specimen was not laboratory tested for aspergillosis, its symptoms were identical with those of the two birds which died with the fungus. While I am loath to suggest that I have ever seen a bird recover from severe aspergillosis, I often wonder about this little bird. Later, in conjunction with four Adelie Penguins, some of which arrived with aspergillosis, these birds were carefully tested for the disease. Cloacal, tracheal, and buccal smears were taken and the birds were actually given treatment for aspergillosis though all of the test cultures were negative.

Each of our puffins was assigned a number on arrival and careful weight checks were used as an index of feeding and health as well as a guide to the need for force-feeding. On arrival puffin No. 1 weighed 274 gm., No. 2 weighed 197 gm. On 31st January, 1958, they weighed respectively 450 gm. and 451 gm.

It takes puffins several seasons to attain full breeding plumage and produce the huge, many-coloured bill sheaths or plates, which increase in size at least to the five-year mark and are shed each autumn. Our birds' beaks have grown considerably and we are gathering photographs of them at various periods in the hope of following this process through for particular individuals. Thus far they have shown little red in their feet or beaks, which may reflect an artificial condition suggesting that the food we offer is too low in carotenoids for them to produce normal pigments.

We are also making a brief chronicle of the moult of our two birds in the hope of gaining as complete a picture of puffin life as possible. We were surprised, despite the notes of Salomonsen and Heinroth, to find our birds entering a flightless moult in the middle of March, before the breeding season. While, of course, our puffins are being kept under highly artificial conditions and would not, in any event, be old enough to breed, we were still quite amazed by their unusual timing. Salomonsen comments on recovering puffins in flightless condition in the North Atlantic during the same period of the year.

Despite our setbacks, we feel the puffin experiment a successful one and think we may now know enough about puffins to keep them in good health. In the near future we anticipate building a " Puffinry ". It will be air-conditioned, somewhat cooled, provide an aquarium-fronted pool and a land area which may be modified for burrowing, and we will feed the puffins on supplemented fish with some shrimp or other carotenoid-rich food.

# THE TRADE IN AND TRANSPORT OF BIRDS

I read with great interest the contributions on the above subject in the last two issues of the magazine. The point is, what are we going to do about it, or are we going to sit back complacently and wait for the anti-bird keeping fraternity to act first?

As Phyllis Barclay-Smith points out, there are many people who, given half a chance, would prevent the keeping of any bird whatever in captivity. These people have closed minds on the subject. They will not listen to argument or logic. They are prejudiced from the start and leave no stone unturned to throw the limelight on any event which will reflect badly on aviculture. Let there be one case of neglect or delay in transit of a consignment of birds and they seize on it with enthusiasm and become almost hysterical in their condemnation of the whole practice of importing birds. Unfortunately, such people have the weight of uninformed public sentiment behind them. Ask any non bird-keeping person a spot question : is it or is it not cruel to keep birds in captivity? and I will bet that in ninety-nine cases in a hundred he will, without thinking reply : " Yes, how would you like to be shut up in a cage? "

Public sentiment or opinion—call it what you will—is a very powerful force and in the face of it Governments are apt to make laws which may be sweeping and comprehensive in their effect. It only needs a few more cases like the affair at Nairobi to be brought to light and public opinion may be so incensed that we may all wake up one morning and find we can't get any more birds.

The obvious place to prevent the abuse of the bird trade is at the source of supply. If the Governments of the countries of origin could be persuaded to enforce regulations for the proper care and transport of their birds, all would be well, but this would be a tall order. It must be remembered that some species which we cherish over here are considered vermin in their native habitats. I was once told that Ring-necked and Plum-headed Parrakeets are such a pest in India that it was considered more profitable to trap them wholesale and consign them alive to Europe than to spend money on cartridges to shoot them. Likewise we have all heard the tales of the appalling suffering which must be inflicted on Australian birds by the deliberate poisoning of water holes and the laying of poisoned grain to kill cockatoos. If these stories are true, are the people who do this sort of thing really going to care how the birds are sent away, or where they go, as long as they are got rid of?

The second, but less effective way, is to tackle the problem at our end—the receiving end. I say less effective because whatever regulations are enforced about importation into the United Kingdom these

will not prevent abuses in other countries. Nevertheless, we would at least be putting our own house in order.

It is no use appealing to the better natures of the dealers and exhorting them to insist on minimum size cages, etc. I am not here referring to the bona fide bird importers who have good reputations to uphold, but there are, unfortunately, others who are only concerned with importing birds as cheaply as possible, and selling them as soon as possible, to obtain a quick financial return. Some sort of legislation is necessary if these people are not to continue to bring the whole of our hobby into disrepute.

All goods imported have to pass through H.M. Customs and it seems to me that here is where some sort of regulation could be enforced. Would it not be possible for the Avicultural Society to draw up a set of rules on the lines quoted by Phyllis Barclay-Smith and advocated by John Yealland and submit these to the relevant Government Department, coupled with the suggestion that any birds imported under conditions not up to these standards be refused admission to the country?

How much better if these suggestions were to come from ourselves as a responsible Society, than from " the other side ". At least we should be showing our bona fides as genuine aviculturists. Moreover, and this is important, we should be more likely to obtain a favourable hearing if and when any law is passed.

Talking of " genuine aviculturists " brings me to another point, and that is, that not nearly enough of us are making a concerted effort to *breed* birds and establish aviary-bred strains. The trouble is we never wake up to the need to do this until it is almost too late. This is what nearly happened with British birds, but for the timely formation of the British Bird Breeder's Association. And look at parrakeets, when the import ban was lifted a few years ago I actually overheard several parrakeet breeders say that they had given up the commoner species because " it would no longer be worth while breeding them "—presumably not financially worth while? How they must have changed their tune when the ban was suddenly clapped on again!

Let us face it—nearly all the seed-eating birds and many insect and fruit-eaters show a pronounced desire to breed in our aviaries given the right conditions, but apart from parrakeets, pheasants, and waterfowl, how many of us make a sustained effort to establish aviary-bred strains of the " cheaper " birds? Why not—because they are too cheap? Surely if a species is worth keeping at all, it is worth breeding—not just once to say you have done it but regularly and consistently.

I know we are all collectors at heart, we like to keep as many species as possible, with the result that we tend to become " Jacks of all trades, masters of none ". But if only more of us would specialize

and concentrate on trying to establish aviary-bred strains of a few species which appeal to us like Teague with his Gouldians, Norris with his Mountain Bluebirds, and Nicholson with Red-headed Parrot Finches—these men are the true aviculturists—we could in time become independent of importations except in special circumstances, e.g. for a change of blood.

We call ourselves the Avicultural Society. As I understand it the word aviculture means the breeding and rearing of birds, not just the mere keeping of them. The Society offers medals for first breedings—an excellent scheme, but why let it rest at that? Too many of us, I am afraid, having achieved success once are either content to rest on our laurels or turn to other species, with the result that the first generation of aviary-bred stock is dispersed and lost.

D. H. S. RISDON.

DUDLEY, WORCS.

I would like to add a contribution to the debate upon the subject raised by our Editor in the September–October issue, but more particularly my intention is to put a query against two points submitted by Mr. T. Spence in his comments on the original article.

In the November–December number of the Magazine, page 159 and half-way down the page, Mr. Spence writes :—

" Incidentally, we owe a great debt to the R.S.P.C.A. for this hostel and I fear that few of us recognize this." (He is referring to the hostel run by the R.S.P.C.A. at London Airport where livestock is taken for purposes of inspection, feeding, watering, etc., whilst awaiting either owners to turn up or for further transport to other destinations.)

I suggest that whilst some very useful work is done in this way by the Society, and possibly many instances of bad conditions are brought to light and either remedied or greatly ameliorated, there are certainly occasions where interference by officials of the Society or anybody else can do much harm.

Have they any legal right to open boxes and handle animals which are destined for other people?

Supposing a valuable hawk escaped through such interference, and savaged the Inspector or some other animal in the place; who would stand the blame? Supposing a rare bird got away altogether, what excuse could the Society offer to the person whose property the bird was? Supposing a very nervous bird, such as a wild-caught hawk would certainly be, were to take fright and die in a fit through being suddenly inspected by a human being at close quarters, would the Society not be liable to be sued for heavy damages?

Anybody who has experience of wild hawks or game birds will know

very well that I am not exaggerating this possibility of death or serious injury from fright. The handling of these birds is the job of a very experienced specialist, and in any case it is highly doubtful if a hawk would feed on such an occasion, no matter how hungry, nor how tasty the proffered refreshment. It is far better left alone and quiet unless there is obviously something very seriously wrong with the package.

The second point in Mr. Spence's article arises out of his suggestion that we should allow all sorts of other official inspections to bedevil our lives.

On page 160, second paragraph, we read : " I believe that no one should be permitted to import the fauna of another country unless the accommodation the importer can provide is suitable."

(Splendid idea !—But who is to decide what is " suitable " ?) " I feel that only people accredited by, and whose premises have been inspected by, say, the Nature Conservancy, should be permitted to keep the wild fauna of any country."

I will wager a hat that there are very few officials of any body, Nature Conservancy included, who would be competent to decide upon what is suitable accommodation for some hypothetical obscure foreign bird. What is more than likely is that they would send someone rushing off to the London Zoo for the necessary information, and we all know that much of the Zoo accommodation is inappropriate !

Then we have to consider that the vast majority of birds imported are brought in by dealers who always hope that these birds will soon be off their hands. Are we to have a crowd of inspectors attached to every dealer so that each person who buys a Waxbill can be followed home and his arrangements for the bird inspected ?

My feeling is that we are much better off acting as our own police force. We are the ones who know if a dealer is a bad egg, whose place is dirty and who always has sick birds in crowded cages, and who is mainly interested in the profit to be taken from his business. We are the ones who decide whether to do business with him or to leave him to go bankrupt. After all, these premises are already subject to official inspection by law *and it does not work* ! Otherwise why are there still thousands of smuggled lovebirds and parrakeets openly offered for sale week by week ?

I certainly agree with Mr. Spence in his anxiety to see these bird-traffic scandals cleaned up, but I submit that we do no good by seeking more and more intrusion from Officialdom.

Let us rather educate ourselves thoroughly in the needs and general details about a bird, so that when we do acquire one we already have proper knowledge, and accommodation in which to look after it.

D. M. Reid-Henry.

Woodford Green, Essex.

# SOME OBSERVATIONS ON THE CACATUINAE—THE COCKATOOS

By E. N. T. Vane (Great Missenden, Bucks, England)

There has been a considerable hiatus since Peters' *Checklist of the Birds of the World*, Volume III, covering the Psittacidæ, was published in 1937. During the greater part of this period little opportunity was available for further review of the position, although it was obvious that the scope of a work of such monumental dimensions was almost certainly beyond the limits of the lifetime of any single individual and eventually some amendments would be necessary.

Two rather obviously discordant elements stood out in his arrangement of the White Cockatoos, namely the positions of (1) the Blue-eyed Cockatoo, *Kakatoe galerita ophthalmica* (Sclater), from New Britain, and (2) the Red-vented or Philippine Cockatoo, *Kakatoe hæmaturopygia* (Müller), from the Philippines. Dr. Hans von Boetticher, writing in *L'Oiseau* in 1938, criticized these two points in particular; he also remarked upon the position of the Glossy Black Cockatoo, *Calyptorhyncus lathami* (Temminck). This paper only came to my notice quite recently and prompted further inquiry which, with the assistance of Mr. R. W. Sims, of the British Museum (Natural History), who has kindly looked up many early references and checked these notes, leads to the following conclusions.

The Cockatoos naturally fall into two main groups, the Black and the White. Peters divided the former into three genera: (i) *Probosciger* Kuhl, the Great Palm Cockatoos, (ii) *Calyptorhyncus* Desmarest, the Black Cockatoos proper, and (iii) *Callocephalon* Lesson, the Gang-gang Cockatoo. The White Cockatoos he arranged in one genus divided into five sub-genera which will be referred to more fully later on.

## Black Cockatoos

*Probosciger*, which has a number of vernacular names such as Palm Cockatoo, Great Black, Giant, Goliath, Aratoo, etc., is a monospecific genus of which five sub-specific or geographic races are recognized. These races differ only slightly in size, except one, *stenolophus*, which has a distinctly slender feather formation in the crest. So remarkable is this genus that Boetticher considered that it may well deserve an entirely separate sub-family. The generic characteristics of *Probosciger* are: colour black, a bare pinkish facial patch, crest long with slender lanceolate feathers, bill very large and deeply notched, with the upper mandible much compressed and narrower than the

lower. Their range extends from the northern tip of Cape York, Australia, throughout New Guinea and the surrounding islands (Fig. 1).

The second genus, *Calyptorhyncus*, was divided by Peters into two sub-genera, *Zanda* and *Calyptorhyncus*. Boetticher, however, believed that the Glossy Black Cockatoo (*C. lathami* in Peters), merited sub-generic rank as the head was browner, the bill shorter and wider, particularly in the lower mandible, he therefore revived *Harrisornis* Mathews (*Aust. Av. Rec.*, 2, 1914). To add support to this contention, Sir Edward Hallstrom has already recorded that he found the digestive system of this Cockatoo to differ from other Black Cockatoos (*Avic. Mag.* 1954, p. 163). The full title of this bird would therefore become *Calyptorhyncus* (*Harrisornis*) *lathami* (Temminck).

Thus, this genus would be composed of three sub-genera :—

Sub-genus 1. *Zanda* Mathews containing the White-tailed Black Cockatoo, *Calyptorhyncus baudinii* Lear, from south-west Australia, and the Yellow-tailed Black Cockatoo, *Calyptorhyncus funereus* (Shaw), from eastern Australia and Tasmania. These two species resemble each other closely and may well be regarded as the two geographic representatives of different areas. They differ in the colour of the auricular patches and markings of the under-tail. Recently sub-species of *baudinii* have been named, but as they only appear to differ in the size or shape of the bill, it may be more satisfactory to regard them as variations until more information is available, as has been suggested by Ernst Mayr with regard to the " Triton " sub-species mentioned later.

Sub-genus 2. *Calyptorhyncus* Desmarest, consisting of one species, *magnificus*. The Red-tailed or Banksian Cockatoos, of which four sub-species or geographic races are accepted in various areas of Australia, only differing very slightly from each other. The sexes differ considerably in this sub-genus (Fig. 2).

Sub-genus 3. *Harrisornis* Mathews. The Glossy Black Cockatoo as detailed above.

The generic characteristics of *Calyptorhyncus* are black colour, long tails with outer feathers shorter, crest feathers short and broad. Bill short, high, and very broad.

The third genus of Black Cockatoos is *Callocephalon* Lesson, which is the well-known distinctive Gang-gang, a dark grey bird with the edges of each feather pale bordered. In the male the crest is red with soft, curled, rather fern-like feathers. The cere is covered and the tail shorter. It is a mono-specific genus although a somewhat doubtful sub-species is listed. *Callocephalon fimbriatum* (Grant) being the nominate race (Fig. 3).

1. *Probosciger.*

2. *Calyptorhyncus magnificus.* ♂ 3. *Callocephalon fimbriatum.* ♂

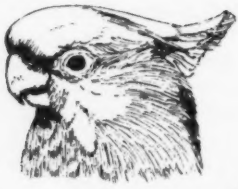
5. *Cacatua moluccensis.*
Crest partially erected.

6. *Cacatua ophthalmica.*
Crest flat.

4. *Cacatua alba.*
Crest fully erected.

7

8



9

11

10

12

13

E.N.T.V. 1950.

7. *Cacatua e. galerita.* Crest erect.

8. *Cacatua e. triton.* Crest flat.

9. *Lophochroa leadbeateri.*

10. *Eolophus e. sanguinea.*

11. *Eolophus ducorpsius ducorps.*

12. *Eolophus e. goffini.*

13. *Licmetis tenuirostris.*

## White Cockatoos

Peters placed the White Cockatoos in five sub-genera under one generic group. First the *Kakatoe* Cuvier, in which were the Greater and Lesser Sulphur-crested species, also the Great White, the Moluccan and Blue-eyed Cockatoos and, for reasons known only to himself, the Philippine Cockatoo. Secondly, the *Lophochroa* Bonaparte, the Lead-beater's. Thirdly, *Ducorpsius* Bonaparte, the Short-crested Ducorp's, Goffin's, and Bare-eyed Cockatoos. Fourthly, the *Licmetis* Wagler, Slender-biiled Cockatoos, and finally *Eolophus* Bonaparte, the Galahs or Roseate Cockatoos.

In the first place, Peters' choice of *Kakatoe* Cuvier as the generic name is not accepted as correct by some scientists. Ernst Mayr (*American Museum Novitates*, No. 947, September, 1937) gave the following reasons : " The generic name ' *Cacatua* ' Brisson (*Orn.*, iv, p. 204, 1760) has been in use in the ornithological literature for a period of more than one hundred years. It is the name used in the *Cat. Birds*, in Sharpe's *Handlist*, in Salvadori's *Orn. Pap. Mol.*, and in every single monograph of the parrots published during the last century. Recently Mathews replaced it by *Kakatoe* Cuvier, which in my opinion is nothing but a *nomen nudum*. I shall continue to use the generic name *Cacatua* Brisson until more valid reasons for its rejection have been advanced." He does, in fact, retain the name in his *Checklist of the Birds of New Guinea*, 1941. This retention of the prior name is most helpful in rearranging the classification of the White Cockatoos more satisfactorily, as will be seen.

With regard to Peters' first sub-genus " *Kakatoe* ". Boetticher stated—and he was undoubtedly correct in saying so—that he could not accept *Kakatoe ophthalmica* (Sclater), the Blue-eyed Cockatoo of New Britain, as a mere sub-species or geographic race of *Kakatoe galerita* (Latham) ; *ophthalmica* does not have a narrow, upcurving crest, filamented when erect, like other members of the *galerita* group. On the contrary, it has a broad-tipped, rounded, and flat crest, which opens fan-wise when erected, as in the Great White (*alba*) and Rose-crested (*moluccensis*) Cockatoos of the Moluccas. He therefore proposed to place these three species in a separate sub-genus, *Plyctolophus* Vieillot, of which *moluccensis* Gmelin was the type species.

His next step was to propose that the short-crested Philippine Cockatoo (*hæmaturopygia*) should be moved from its obviously incorrect position here. So he suggested it should be placed in a more appropriate position with the " *Ducorpsius* " short-crested Cockatoos, quite overlooking the fact that *hæmaturopygia* was, in fact, the type species of *Kakatoe* Cuvier, which made such a revision impossible.

By reverting to the prior name of *Cacatua* Brisson, however, it is possible to correct two errors in one change over. The White Cockatoos may now be rearranged on the lines suggested by Boetticher as follows :

*Genus I.—Cacatua* Brisson

(Type, *C. alba*, designated Salvadori, 1891)

*Sub-genus 1.—C. cacatua* Brisson.

Colour white or nearly white ; bill black with exposed cere. The crest feathers are broad-tipped and lie flat along the crown when depressed, but open fan-wise across the front of the head.

Species (i) *C. alba*. The Great White Cockatoo of the northern Moluccas (Fig. 4).

(ii) *C. moluccensis*. The Rose-crested Moluccan Cockatoo of the southern Moluccas (Fig. 5).

(iii) *C. ophthalmica*. The Blue-eyed Cockatoo of New Britain (Fig. 6).

*Sub-genus 2.—C. eucacatua* Mathews 1917. (Type *P. galeritus* Latham, original designation).

Colour white ; bill black with exposed cere. Crest long with up-curving filamented feathers which open lengthwise over the head.

Species (i) *galerita* (Figs. 7–8).

(ii) *sulphurea*

Their habitat extends through Australia, New Guinea, and the surrounding islands across to the islands of the Timor Sea.

The Greater Sulphur-crested, *galerita*, includes the Triton Cockatoo of New Guinea, of which form Peters listed no less than five sub-species. Mayr has made a careful study of these birds and came to the conclusion that although individual specimens do vary in size or shape of bill to slight degree, these differences were not constant, nor related to any particular geographic distribution. He therefore combined them once more as one sub-species, *Cacatua galerita triton* Temminck, adding, " without forgetting that they differ in size considerably." This might be a more satisfactory plan to adopt with the three Australian sub-species, which again are all very similar, only varying in size of bill or body size or length of wing. The skins found in museums are almost impossible to separate definitely into distinct geographic races according to their labels.

Of the Lesser Sulphur-crested Cockatoos, *sulphurea*, only one is readily distinguished by the characteristic colour of the crest, namely the Citron- or Orange-crested Cockatoo of Sumba, *citrino-cristata*. The remaining five sub-species are island races, varying slightly in size, but being insular types they are not subject to geographic overlapping and there would be little likelihood of intergrading to make distinction more difficult.

*Genus II.—Lophochroa* Bonaparte

*Species 1.—Lophochroa leadbeateri* (Vigors).

Body colour white with deep pink suffusion on underparts ; crest again long and up-curving with filamented feathers when erect. The bill is whitish and the cere covered with small feathers.

Leadbeater's (Major Mitchell's, Pink Cockatoos, etc.) appear to stand between the black-billed, bare-cered white cockatoos and the short-crested, whitish-billed, covered-cered cockatoos, having affinity to both. Their territory is confined to the continent of Australia, where four races are recognized ; all very similar (Fig. 9).

*Genus III.—Eolophus* Bonaparte

*Sub-genus 1.—Eolophus* Bonaparte 1854.

The body colour of this sub-genus is grey on the upper parts and rose-pink on the under parts. The crest is shorter and lies close to the crown when depressed. Bill white, cere covered with small feathers.

The well-known Roseate Cockatoos of Australia (Galahs) were, in Boetticher's opinion, entitled to sub-generic rank and he placed them under *Ducorpsius* Bonaparte 1857, but *Eolophus* takes priority if the two are to be united. Their unusual colour would, indeed, seem to justify segregation. Three sub-species or geographic races are listed.

*Sub-genus 2.—Ducorpsius* Bonaparte.

Body colour white. Otherwise similar characteristics as above.

Species (i) *E. ducorps* (Bonaparte), Ducorp's Cockatoo from the Solomons (Fig. 11).

(ii) *E. sanguinea* (Gould), Goffin's Cockatoo from Tenimber (Fig. 12) and the Bare-eyed Cockatoo from Australia, where three races are recognized (Fig. 10).

(iii) *E. hæmaturopygia* (Müller) from the Philippines. Transferred from Peters' *Kakatoe*.

*Genus IV.—Licmetis* Wagler

The characteristics of this genus resemble those of the foregoing, with the exception of the unique bill which has the upper mandible greatly elongated. This has an apparent use to enable the bird to unearth certain roots which form part of its diet. It is confined to Australia, where two local races are recognized under one species (Fig. 13).

One other doubtful problem remains. Should the Cockatiel, *Nymphicus hollandicus*, be classified as a member of the Cacatuinæ ? Boetticher thinks not, he would prefer to return it to the Platycercinæ. However, the position is doubtful. No broadtail cock ever shares incubation duties with his hen, yet all the Cacatuinæ do so. Again, Dr. F. H. Glenny is carrying out considerable research into the classification of the parrots by anatomical characteristics—the clavicles and carotid artery formula—and he still places the Cockatiel with the

cockatoos. Pending some further valid reason to justify another change over, it seems more satisfactory from present knowledge to leave the Cockatiel among the cockatoos.

Classification proposed :—

SUB-FAMILY CACATUINÆ.—THE COCKATOOS

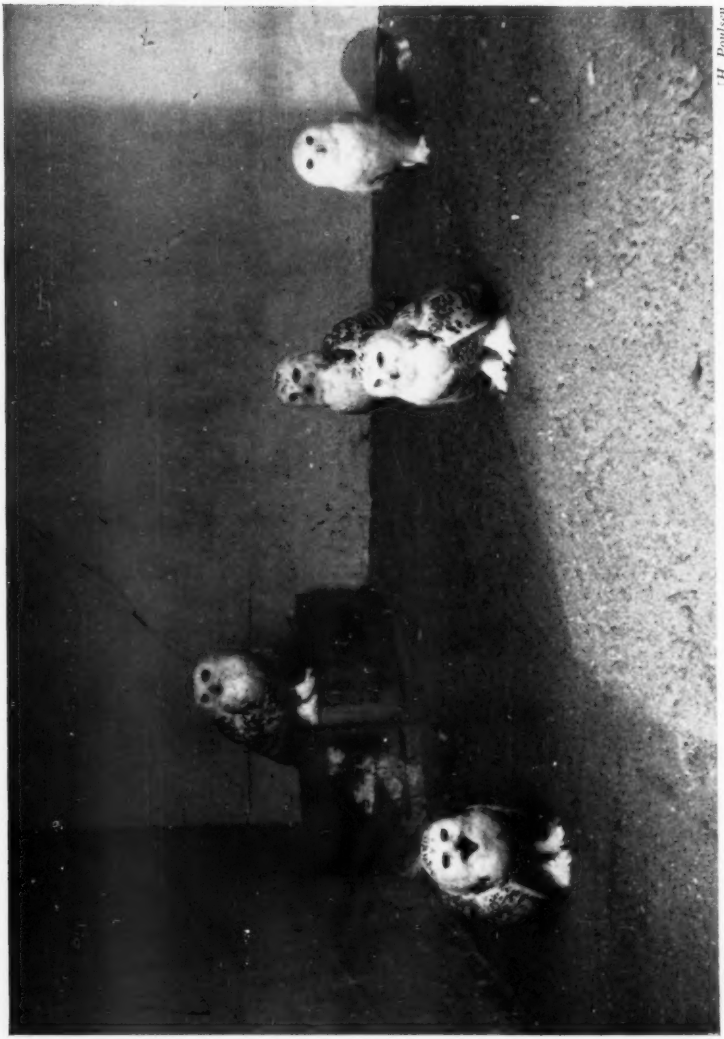
*Black Cockatoos*

*Genus : Probosciger* Kuhl.
  *Species : aterrimus* (races : *aterrimus, alecto, goliath, stenolophus, intermedius*).
*Genus : Calyptorhyncus* Desmarest.
  *Sub-genus : Calyptorhyncus* Desmarest.
    *Species : magnificus* (races : *magnificus, macrorhyncus, naso, samueli*).
  *Sub-genus : Zanda* Mathews.
    *Species : baudinii* (races : *baudinii, latirostris* (?)).
      *funereus.*
  *Sub-genus : Harrisornis* Mathews.
    *Species : lathami.*
*Genus : Callocephalon* Lesson.
  *Species : fimbriatum* (races : *fimbriatum, superior.*)

*White Cockatoos*

*Genus : Cacatua* Brisson.
  *Sub-genus : Cacatua* Brisson.
    *Species : alba.*
      *moluccensis.*
      *ophthalmica.*
  *Sub-genus : Eucacatua* Mathews.
    *Species : galerita* (races : *galerita, fitzroyi, rosinæ, triton*).
      *sulphurea* (*sulphurea, djampeana, abbotti, occidentalis, citrinocristata, parvula*).
*Genus : Lophochroa* Bonaparte.
  *Species : leadbeateri* (races : *leadbeateri, mungi, mollis, superflua*).
*Genus : Eolophus* Bonaparte.
  *Sub-genus : Eolophus* Bonaparte.
    *Species : roseicapilla* (races : *roseicapilla, kuhli, howei*).
  *Sub-genus : Ducorpsius* Bonaparte.
    *Species : ducorps.**
      *sanguinea* (races : *sanguinea, subdistincta, ashbyi, goffini*).
      *hæmaturopygia.*
*Genus : Licmetis* Wagler.
  *Species : tenuirostris* (races : *tenuirostris, pastinator*).
*Genus : Nymphicus* Wagler.
  *Species : hollandicus.*

* Peters spells this ducrops, but the text he quotes refers to a plate entitled Ducorps, which was rather obviously intended and also was prior to the text.



[H. Poulsen

A Pair of Snowy Owls at the Copenhagen Zoo and Their Young, Hatched in June, 1958.

[To face p. 17.

Copyright]

# BREEDING OF THE SNOWY OWL

By H. POULSEN (Copenhagen, Denmark)

[Copyright] H. Poulsen

A PAIR OF SNOWY OWLS AT THE COPENHAGEN ZOO AND THEIR YOUNG, HATCHED IN JUNE, 1958.

[To face p. 17.

In August, 1949, the Copenhagen Zoo got eight young Snowy Owls from Greenland. Four of them were presented to other zoos and four birds remained in our zoo and later on proved to be two pairs. Each pair was kept in its own aviary and we hoped that at least one of them would breed. Sometimes in spring one female was seen sitting in a corner of the aviary giving soft, clucking notes. We thought it was an indication of breeding, but no eggs were laid.

Last winter we changed the females hoping that the new pairs would breed. Unfortunately after a short time one female died. In late April we saw the other female frequently sitting in a corner of the aviary and in the middle of May she had eggs. We do not know exactly when the first egg was laid as we would not disturb her, but on 18th April there were two eggs. The eggs were laid on alternate days until there were six round white eggs. The female started to sit constantly on the eggs when the second egg was laid and she carried out the incubation alone. No nest was made, the female had only made a depression in the sand.

In the middle of June one young hatched. In all three young hatched, the other eggs were addled. We do not know exactly when the first young hatched as we would not disturb the female, but the average incubation period is stated to be thirty-three days. The three Snowy Owls were the first ones to be reared in our garden. The owls are fed once a day with dead white rats, and the male brought the food to the sitting female, passing it to her or laying it at the nest. The young were fed by the female only while in the nest, and by both parents after they left at about three weeks old. The parents tore out small pieces of the rats and fed them to the gaping young.

At first the young had white down and when about two months old they had their juvenile plumage and could fly. At present they resemble the female, having white feathers with more or less brown bars. The old male is pure white with a few brown spots and bars on the upperside.

The Snowy Owls are the most attractive owls in our collection, on account of their beautiful white plumage, their golden eyes, and because they are largely diurnal. They can, however, be seen sitting motionless for hours only now and then fixating flying birds.

Snowy Owls are usually silent, especially outside the breeding season ; I have, however, heard the male's hooting, and low cackling notes from the female when showing pre-coition display and low clucking when sitting on the eggs. Further, I have heard cheeping whistles from the owlets when begging for food with swaying heads and

flapping wings. When one enters the aviary and an owl is forced back it snaps the bill and hisses with lowered body, extended wings, and raised body-feathers.

* * *

## BIRD NEWS FROM CLÈRES AND LOS ANGELES, 1958

By J. DELACOUR (Los Angeles, California, U.S.A.)

Despite the wet and cold weather which prevailed through the spring and summer at Clères, a satisfactory number of waterfowl and game-birds have been reared in 1958. The young geese suffered somewhat from the excess of rain, but some Magellan, Ashy-headed, Emperors, and Snows survived. The ducks were more successful, as they were kept indoors and without bathing water until they started feathering, a method which proves very satisfactory in wet years. Among them are three Sharp-winged, four Versicolor, two Cape Teal, four Hawaiian, nine Philippine Mallards, four White-eyes, and fairly large numbers of Bahama, Common Pintails, American and Chiloe Wigeons, Black Ducks, Shovellers, Cinnamon Teal, Red-heads, Rosy bills, Red-crested Pochards, Carolinas, and Mandarins ; four Southern Pochards were the first bred at Clères. A special mention should be made of a pair of Brazilian Teal, wild caught birds, of the lesser sub-species, which had lived at Clères for seven years without laying ; this year the female laid four clutches and twenty-three young were reared.

Twenty Spicifer and seven white Peafowl were raised as well as a few common ones, and Wild Turkeys. There were five Red Junglefowl ; eight Blue Eared, four Versicolor, seven Elliot's, three Mikado Pheasants ; two White-crested, seven Horsfield's, five Swinhoe's Kalijs ; six Cheer ; one Grey Peacock Pheasant, and five Siamese Firebacks, as well as Goldens, Amhersts, and Melanistic Pheasants.

Pairs of Palawan and Bronze-tailed Peacock Pheasants have been added to the collection, as well as Edwards' and Brown Eared Pheasants sent from America for a welcome change of blood.

A number of Lovebirds of different species also bred ; Fischer's in particular, of which we keep about twenty pairs in a large grassy aviary, produce over a hundred young every year.

A number of Toucans, Rollers, Starlings, and other exotic birds have been recently acquired as well as Lories and other parrots, and the collection keeps growing.

My Los Angeles aviaries now number sixteen. I found that doves and finches bred better if fewer pairs were kept together. For reasons of overcrowding, no Mountain Witches, Bleeding-hearts, Bartlett's,

Chiriquis, and Blue-headed Ground Pigeons have been reared this year. I hope they will do better now that such pairs have been isolated from other large doves. On the other hand, one pair of the rare and nearly extinct Grey-headed (*G. caniceps*) has reared five, one egg per clutch ; one pair of *montana*, eight ; one pair of *martinica*, four ; Brush Bronze-wings, three. Small doves have done well : eight Blue (*pretiosa*), twelve Peruvian, four Cape, eight Pigmy, and many Diamond Doves.

A happy surprise was the rearing of a young bird by a pair of Moustache Ground Pigeons (*G. mystacea*), a now very rare species from the Lesser Antilles, after six years of sterility. In the same large aviary, a similar accomplishment was performed by a pair of Philippine Pheasant-tailed Doves, also after six years of inaction. One must never lose patience with birds ! Jamaican Violet-necked Doves also reared two young. The various finches, much overcrowded, did not do very well, the only interesting happening being the rearing of three Australian Blood Finches (*P. phaeton*).

Besides many beautiful Tanagers and Sugar Birds, which I have mentioned before, newcomers worthy of notice are a pair of the beautiful Orange-breasted Green Cotingas (*Pipreola jucunda*) and a male of Rieffer's (*P. riefferii*) from Colombia, several Long-tailed Manakins from Costa Rica, and ten Sunbirds sent from Kenya and presented to me by Mr. Maurice Machris (*Nectarinia johnstoni*, *N. famosa*, *N. tacazze*, *N. pulchella*). These Sunbirds do very well outdoors the year round in the mild climate of Southern California. Each pair, or individual, is kept in a different aviary which they share with doves, finches, and many other birds, even Humming Birds (Black-chinned and Costa's). The latter and the Sunbirds are fed on a mixture of honey and beef extract, which does not spoil before twenty-four hours, adding to this diet small insects, which are rather scarce in the winter but abundant during the warmer months. It is amusing to witness the incessant chase they give them.

Ringed Teal, Hooded Mergansers and Ruddy Ducks now live on the stream. The American Flamingos, which had become hopelessly white through lack of carotene, have now regained their full pink colour since carrot juice (preserved) and grated fresh beet have been added to the soaked biscuit. It was interesting to notice that a pink suffusion was already showing after a few weeks, apparently without a moult.

* * *

# SOME RESULTS WITH COLOUR FEEDING OF CAROTENOIDS IN BIRDS AT THE BASEL ZOOLOGIGAL GARDEN

By Hans Wackernagel (Basel, Switzerland)

It is known that most of the yellow, orange and red pigments of the bird's skin and plumage are carotenoids. It is further known that these carotenoids are not synthesized by the bird. They have to be present in the food and are merely deposited in the bird's body either unchanged or transformed to a certain degree. These findings account for the much regretted fact that so many birds which are brilliantly coloured in nature fade in captivity. The bird-keeper who wants to retain these colours in his captive animals is faced with the problem of finding the right carotenoids and supplying them in adequate amounts to the birds in his care.

In the Basel Zoo work was started on these problems in 1956 and a few experiments in this field are worth mentioning. The most satisfying results were obtained in a group of Sunbirds (Nectariniidae) of East Africa. Here we added to the liquid food, which consists of a solution of honey, meat extract, condensed milk, and vitamins in water, the synthetic carotenoid, canthaxanthin, from the firm F. Hoffmann-La Roche and Co., Ltd., Basel.[1] This deep orange-red carotenoid which occurs in nature in the mushroom cantharellus was used in a 1 per cent stabilized dry form. A small quantity (the amount held on the point of a knife) was dissolved in ½ litre of liquid.

The following birds responded to this supplementation of their food. After moulting on canthaxanthin a male Beautiful Sunbird (*Nectarinia pulchella*) developed a good breeding plumage with the red patch in the centre of the chest. This red patch, however, was not so red as in nature, but seemed to be just canthaxanthin-coloured. At the time of writing this bird is again in its non-breeding plumage. Before the use of canthaxanthin its breast patch was only dull brownish in colour.

The second bird to respond was a male Variable Sunbird (*Cinnyris venustus falkensteini*). After the moult its breast and belly, which had been whitish, became golden-yellow. This is, as can be ascertained by the illustration in C. W. Mackworth-Praed and C. H. B. Grant's *Birds of Eastern and North-Eastern Africa* and by a skin in the Basel Museum, just the natural colour. In this case the bird transformed the orange canthaxanthin into a yellow compound apparently natural to this race.

The last case was a female Scarlet-chested Sunbird (*Chalcomitra*

[1] cf. Steinegger, P., Streiff, K., and Zeller, P.: Pigmentation of Egg Yolks and Broilers by the Addition of Synthetic Carotenoids to the Poultry Feed. *Mitteilungen aus dem Gebiete der Lebensmitteluntersuchung und Hygiene*, Vol. 48, 1957, No. 6, published by the *Eidg. Gesundheitsamt*, Bern, Switzerland.

*senegalensis*). This bird died and an immediate examination revealed quite clearly that the body fat was dyed orange. Dr. A. Winterstein of the firm F. Hoffmann-La Roche and Co., Ltd., was so kind as to examine the specimen further. He found 50γ of unchanged canthaxanthin in the adipose tissue by way of chromatographic and spectroscopic determination. The plumage of the female Scarlet-chested Sunbird is of olivaceous colour and does not display any yellow or red. It can be mentioned here that Mr. G. Glatt, Birsfelden, Switzerland, has had quite spectacular results by using canthaxanthin in the food for red Canaries (Hybrid Canary × Red Siskin, *Spinus cucullatus*).

To another foodstuff, a fat-soluble extract from alfalfa (commercial product), which is rich in yellow carotenoids, two species, which always faded badly up to the present time, reacted favourably. These are the Scarlet Cock of the Rock (*Rupicola peruviana sanguinolenta*) and the Scarlet Ibis (*Endocimus rubra*). They are each represented by one individual at the Basel Zoo. The addition of the above-mentioned extract to their food produced a very marked deepening, although no full development, of the red colour of their plumage.

Finally, a visible improvement in colour was attained in the Basel group of Flamingos. These birds profited from a supplementation of their food with a Scottish seaweed meal. The cause of this improvement is not yet clear. It could be the carotenoid fucoxanthin which is still present in fresh seaweed meal. Seaweed meal which has been stored for a long time does not seem to have any effect. We tried this seaweed meal since other foodstuffs rich in red carotenoids, e.g. fresh crustaceans, were not available in large quantities. Recent observations point to the fact that alfalfa extract probably gives a favourable effect, too.

* * *

## THE ORNAMENTAL PHEASANT REGISTRY

Reynolds Farm, Great Witchingham, Norwich, Norfolk

Registrar : PHILIP WAYRE

The response to the registration forms sent out in the May–June issue of the AVICULTURAL MAGAZINE has been good. Most collections have now been recorded, although a few forms are still coming in.

From the following table it at once becomes apparent that there are really only adequate stocks existing in this country of the four common species of pheasants, Silver, Reeves', Golden, and Lady Amherst's. Of the rarer species the few that are left are highly inbred and no amount of re-mating amongst existing collections can rectify this.

The number of representative collections in the British Isles at the moment probably does not exceed half a dozen and it is clear that unless something constructive is done in the very near future many

forms will cease to exist in this country. Where these birds are also scarce in their natural range, their extinction cannot be long delayed unless numbers are artificially propagated. Pheasant breeders in the United States of America are, of course, doing wonderful work in the propagation of certain species, but this does not remove the threat of extinction from several forms.

| *Species.* | | *M.* | *F.* | *Unsexed.* | *No. of collections.* |
|---|---|---|---|---|---|
| Satyr Tragopan | *Tragopan satyra* | 1 | | | 1 |
| Temminck's Tragopan | *Tragopan temminckii* | 13 | 11 | 19 | 9 |
| Himalayan Monal | *Lophophorus impejanus* | 16 | 12 | 14 | 11 |
| Black Kalij | *Lophura leucomelana moffitti* | 4 | 2 | | 4 |
| Black-breasted Kalij | *Lophura leucomelana lathami* | 6 | 6 | | 3 |
| Nepal Kalij | *Lophura leucomelana leucomelana* | 3 | 3 | | 2 |
| White-crested Kalij | *Lophura leucomelana hamiltoni* | 1 | | | 1 |
| Silver | *Lophura nycthemera nycthemera* | 112 | 144 | 30 | 42 |
| Edwards' Pheasant | *Lophura edwardsi* | 17 | 13 | 8 | 11 |
| Imperial Pheasant | *Lophura imperialis* | 1 | | | 1 |
| Swinhoe's Pheasant | *Lophura swinhoii* | 43 | 56 | 21 | 27 |
| Vieillot's Crested Fireback | *Lophura rufa* | 1 | 1 | | 1 |
| Siamese Fireback | *Lophura diardi* | 1 | | | 1 |
| Bornean Fireback | *Lophura ignita* | 1 | 1 | | 1 |
| Blue Eared Pheasant | *Crossoptilon auritum* | 21 | 20 | 5 | 14 |
| Brown Eared Pheasant | *Crossoptilon mantchuricum* | 5 | 5 | 2 | 3 |
| Cheer Pheasant | *Catreus wallichi* | 3 | 3 | | 1 |
| Elliot's Pheasant | *Syrmaticus ellioti* | 11 | 11 | 12 | 7 |
| Mikado Pheasant | *Syrmaticus mikado* | 21 | 10 | 9 | 7 |
| Scintillating Copper Pheasant. | *Syrmaticus soemmerringi scintillans* | 20 | 11 | 11 | 7 |
| Reeves' Pheasant | *Syrmaticus reevesi* | 71 | 89 | 12 | 34 |
| Golden Pheasant | *Chrysolophus pictus* | 271 | 237 | 54 | 59 |
| Lady Amherst's Pheasant | *Chrysolophus amherstiæ* | 87 | 107 | 42 | 46 |
| Grey Peacock Pheasant | *Polyplectron bicalcaratum* | 5 | 5 | 4 | 3 |
| N. Sumatran Bronze-tailed Peacock Pheasant. | *Polyplectron chalcurum scutulatum* | 2 | 1 | | 1 |
| The Crested Argus | *Rheinartia ocellata* | 1 | 1 | | 1 |
| Green Peafowl | *Pavo muticus* | 10 | 3 | 11 | 5 |
| Black-winged Peafowl | *Pavo cristatus* | 40 | 25 | 10 | 15 |
| White Peafowl | *Pavo cristatus* | 1 | 1 | | 1 |
| Californian Quail | *Lophortyx californica* | 5 | 1 | | 4 |
| Chinese Painted Quail | *Excalfactoria c. chinensis* | 16 | 20 | 11 | 14 |
| Bob White Quail | *Colinus virgininus* | 1 | 1 | | 1 |
| Rain Quail | *Coturnix coromandelica* | 3 | 5 | | 2 |
| Indian Chukor | *Alectoris græca chukar* | 3 | 2 | | 3 |
| Persian Chukor | *Alectoris græca weræ* | | | 4 | 1 |
| Indian Painted Partridge | *Francolinus pictus* | 1 | 1 | | 1 |
| Uganda Crested Guinea Fowl. | *Guttera edouardi sethsmithi* | | | 2 | 1 |
| Sclater's Guinea Fowl | *Guttera edouardi sclateri* | | | 2 | 1 |
| Vulturine Guinea Fowl | *Acryllium vulturinum* | 3 | 6 | 12 | 4 |
| Sonnerat's Jungle Fowl | *Gallus sonnerati* | | 1 | 4 | 2 |
| Ceylon Jungle Fowl | *Gallus lafayettii* | | | 5 | 1 |
| Common Jungle Fowl | *Gallus g. gallus* | 1 | | | 1 |

The numbers of Common Jungle Fowl are not included, since it is felt that none are pure bred with the exception of the one male in the London Zoo.

## THE EXCHANGE AND MART SCHEME

I would like to remind members that subscriptions to the scheme are now due and should be sent to me at "The Malt House, Barford, Warwickshire". The subscription is 5*s*. per annum expiring on the 31st day of December in each year.

Full details of the scheme were set out in the January–February, 1958, number but if any member of the Society wishes to obtain particulars, I will willingly forward them. Members of the scheme are entitled to send in to me as often as necessary lists of birds wanted or for sale or exchange by them, and I will do my best to put them in touch with others who may have the birds they seek or want the birds they have for exchange or disposal.

Last year quite a number of members of the Society joined and many took advantage of the offers, but to make the scheme the success which everyone hopes it will be many new members are required. It is, therefore, up to the members of the Society to give their support generously.

This year the colour plate fund has benefited by £3 9*s*. 3*d*., the surplus income.

CLAUDE M. PAYNE.

* * *

## LONDON ZOO NOTES

By J. J. YEALLAND

David Attenborough and Charles Lagus returned from their "Zoo Quest" to Paraguay on 18th December, and in addition to some mammals, reptiles and amphibians they brought four young White-crested Guans (*Pipile jacutinga*), a Crested Cariama (*Cariama cristata*), two young Maximilian's Parrots, two Canary-winged Parrakeets, and a Magellan Eagle-Owl, the whole collection being presented by the B.B.C. Television Service.

A Mikado and an Elliot's Pheasant have been presented by the Leckford Estates, Ltd., a Painted Quail by Mr. P. L. Wayre, three Speckled Pigeons by Mr. I. M. Walker, one of the West African Green Pigeons (*Treron australis*; also known as *T. calva*) by the Rev. R. Gates, and a Formosan Black Bulbul (*Microscelis nigerrimus*), new to the collection, by Mr. J. R. Newmark. Two Ashy-headed Geese, bred at St. James' Park, have been received in exchange.

Two Black-footed Penguins have been hatched and the Cereopsis Geese that reared two young last winter are nesting again.

# BRITISH AVICULTURISTS' CLUB

The sixty-fifth meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, South Kensington, on Monday, 12th January, 1959, following a dinner at 7 p.m.

Chairman : K. A. Norris.

Members of the Club : Miss J. Barnes, A. W. Bolton, Miss K. Bonner, W. D. Cummings, J. O. D'eath, B. Dittrich, Squadron-Leader C. Everitt, Mrs. C. Everitt, Miss R. Ezra, Colonel H. B. Finch, Dr. E. F. Gleadow, Dr. R. Gottlieb, H. J. Harman, L. W. Hill, Major E. F. Housden, F. E. B. Johnson, M. Kendall, Miss E. M. Knobel, Miss M. H. Knobel-Harman, Dr. F. B. Lake, A. J. Lambert, P. H. Maxwell, F. Mosford, G. S. Mottershead, S. Murray, A. A. Prestwich, D. M. Reid-Henry, R. C. J. Sawyer, T. Spence, E. O. Squire, Newton R. Steel, P. Sutton, E. N. T. Vane, Mrs. E. N. T. Vane, C. H. Wastell, Mrs. C. H. Wastell, J. J. Yealland.

Members of the Club, 38 ; guests, 24 ; total, 62.

The Chairman welcomed four overseas visitors : Mr. Jiri Felix, Chief Zoologist at the Prague Zoo, Mr. Zdenek Veger, President of the Association of Exotic Bird Breeders of Czechoslovakia, Mr. Howard Jarman, sometime President, Avicultural Society of South Australia, and Mr. Paul Hansen, of Odense.

Mr. Philip Wayre showed two coloured films, " The Gyr-Falcon in Iceland " and " Barnacle Geese in South Uist ".

The first was made in the north-east of Iceland in the summer of 1956, in collaboration with Dr. Gordon Jolly. It opens with views taken on the road from Reykjavik to Akureyri, followed by shots of Harlequin Ducks, Long-tailed Ducks, Eiders and Red-necked Phalarope. These sequences are followed by shots taken from a hide at a Gyr-Falcons' eyrie in the Odadahraun Desert. Seven eyries were found of which four were definitely and five probably occupied. The film includes sequences of both birds at the nest and feeding the young. There are also shots of Ptarmigan at the nest, taken in the same area. This is believed to be the first full-length film on the Iceland Gyr-Falcon to be produced.

The second film deals mainly with the flocks of Barnacle Geese wintering on the Machair of South Uist, but also includes sequences of Grey-lag Geese, Curlews, Dunlin, Whooper Swans and other birds in the area.

The Chairman, himself well known for his photographic studies of birds, was able to use his expert knowledge to summarize the highlights. The quality and interest may be judged from his remark that he understood Miss Phyllis Barclay-Smith, unavoidably absent, had seen these films seven times and would, doubtlessly, be disappointed at missing the present showing.

The very unpleasant weather conditions prevented quite a number of regular members from attending. A great pity as they missed seeing two really remarkable films.

The next meeting of the Club is on **Monday, 9th March, 1959.**

ARTHUR A. PRESTWICH,
*Hon. Secretary.*

* * *

## NEWS AND VIEWS

Members will be delighted to learn that Dr. Edward Hindle has had a glacier named in his honour—Hindle Glacier, South Georgia.

* * *

Breeding reports, 1958. Mrs. Ruth Goodbrand, British Columbia, Gouldians nested in an old jam tin and reared four black-headed young; Green Singing Finches reared six. M. Scott Henderson, Mandarin Mynahs hatched three young, reared one. F. E. B. Johnson, three Temminck's Tragopans and twelve Elliot's Pheasants. Dr. K. G. Rothwell, one King Parrakeet (see 1958, 149).

* * *

It is pleasing to note that three of the four 1958 awards of the American Pheasant Society were awarded to members* of our Society.

Master Breeder's Award for Pheasant Culture, *Dr. D. S. Newill.
Master Breeder's Award for Waterfowl Culture, Elmer Heft.
Master Breeder's Award for Partridges and Doves, *Jerome Buteyn.
Achievement Award, *Jean Delacour.

* * *

The Bronze Medal of the Avicultural Society of South Australia has been awarded to H. J. Key for the first breeding of the Spur-winged Plover *Lobibyx novae-hollandiae*, and to W. Curl for breeding the Pin-tailed Whydah (St. Helena Waxbills as foster-parents).

The Simon Harvey Memorial Medal for the outstanding breeding achievement of the 1957–58 season was awarded to H. J. Key for his success with the Spur-winged Plover.

* * *

In spite of really adverse weather—the temperature exceeded 70° on only three occasions during the whole summer—Sir Crawford McCullagh, Bart., experienced quite a satisfactory breeding season. The following young parrakeets were fully reared: 6 Many-coloured, 12 Red-rumped (7 normal, 5 yellow), 6 Bauer's, 6 Splendid, 3 Elegant, 1 Bourke's, 1 Princess of Wales's, 3 Rock Pebblers, 5 Layard's, 1 Plum-headed, 1 lutino Ring-necked, 1 Yellow-bellied × Yellow-rumped hybrid; and Lovebirds—6 Nyasa, 5 Peach-faced, 7 Masked (6 normal, 1 blue).

After over six years Kenneth Smith has relinquished his position of Superintendent of Paignton Zoological and Botanical Gardens to build a new Zoo Park at Trinity, Jersey, Channel Islands, in conjunction with Gerald Durrell, who is at present in the Argentine on another of his collecting expeditions.

The Zoo, which will not be ready for public opening until Easter, should prove a great attraction on the island. Tropical bird and parrot houses are included in the lay-out.

* * *

Brian C. Turner sends further news of his Virginian Cardinals (see 1957, 175). He writes: "Again this past season resulted in two nests. In the case of the first three young hatched from three eggs. One youngster soon disappeared and the remaining two died (or were killed) before fledging. The second nest had three eggs, one of which I placed in a Greenfinches' nest. This egg hatched but the chick died within twenty-four hours. The other two eggs hatched but again were only alive for about a week. Unfortunately the hen Cardinal broke a leg and died last month."

* * *

L. J. Praill is a comparative newcomer to aviculture, but within just a few years he has built up one of the most extensive collections of psittacine birds in the country. During the past breeding season nearly 200 young of some twenty-five species were reared. This certainly augurs well for 1959! The full results are: 11 Pennant's, 1 Crimson-winged, 1 Barnard's, 3 Bauer's, 3 Rock Pebbler, 9 Mealy Rosella, 5 Red Rosella, 2 Golden-mantled Rosella, 15 Bourke's, 7 Turquoisine, 3 Elegant, 9 Splendid, 30 Red-rumped, 5 Stanley, 5 Cockatiel, 1 Golden-crowned Conure, 10 Red-bellied Conure, 1 Ring-necked (split-lutino); Lovebirds—30 Black-cheeked, 11 Nyasa, 15 Peach-faced, 1 Masked, 5 Madagascar, 11 Fischer's. A pair of Brown's hatched three, but let them die when they were ten days old.

* * *

P. E. Schneider, San Gabriel, California, reports: "My outstanding success this past breeding season was the rearing of ten Rock Peplar or Regent Parrakeets from three pairs. One pair was 1957 hatched and was only eleven months old when they had three young in the nest. I have found that the easiest and earliest method of sexing young Regents is by the culmen. The young males are brighter, glossier, and smoother. The young females are duller in colour, not as shining, and a rougher culmen. I have never seen this fact recorded anywhere."

Mrs. Ferne Hubbell, San Diego, California, writes : " Success at last ! Our *Pionus menstruus* hatched three babies. One was very weak and soon died, another they let get cold, and between the parents and myself we have a lovely bird four months old—hatched 26th July. It is now on its own. We have it in the house and it is starting to talk. There is very little blue on the head or neck ; just a few pink feathers under the tail.

The Blue-and-yellow Macaws had their usual two babies ; four Alexandrines from one nest ; four Plum-heads from one nest, with one male half blue. Our Lineolated nested four times, hatching some sixteen babies ; four pied Cockatiels ; two baby Rosy-breasts."

* * *

The Rev. J. R. Lowe reports an interesting experience with a pair of Half-masked Weavers or, as he refers to them, Rüppell's Weavers. In late August the male began to weave a nest with fresh, broad grass blades : it was suspended from the wire-netting roof of an open flight. The female took no interest in the weaving, which was completed in about the second week of September, nor did she appear to examine the nest until it had turned from green to brown. The entrance to the nest was from below, and the nest cavity was to the right in the form of a pouch. Consequently, it was very difficult to determine what was happening inside. The first of four or five eggs was laid probably on the 16th. On 3rd October examination with a finger revealed no eggs but a mass of young. The female fed well, using many mealworms : the male did not visit the nest or take any interest. The weather was appalling, continuous heavy rainstorms. Some protection was provided by a sack fastened to the roof of the flight, but the nest was frequently covered with raindrops which ran down the sides. The nest was not lined in any way, but the weaving had been beautifully done and was very strong and efficient. Unfortunately, after a stormy night on the 5th–6th a young one was found to have been thrown out of the nest.

* * *

Joel Kuperberg, Manager of the Caribbean Gardens, Naples, Florida, sends some notes of a near-success with Screamers. He writes : " During the week ending 24th October, a pair of Black-necked Screamers (*Chauna chavaria*) took up housekeeping in a nest of their building. This nest had been constructed atop a 30 ft. pine tree within full view of the public visiting our attraction. Nesting began about 24th October ; apparently only two eggs were laid. On or about 18th November the parent(s) were first observed feeding by regurgitation (as best could be observed from the ground).

The young leaped or were pushed from the nest (as with Wood Ducks) on 28th November. There were two young ; no sign of

egg-shell or other eggs was found in the nest. The " chicks " crossed about 150 feet of ground, thrashed across a 20 ft. canal, and took up residence on an island in our waterbird pond. The parents remained with them at all times. The young were feeding on vegetation immediately after reaching the island.

The chicks were described by our aviculturist, Mr. Ralph Currier, as yellow, down-covered (no evidence of " quills "), flightless, and non-swimming (actually having negotiated the water in a most unswimming-like manner !).

Early on the morning of 2nd December, one of the young was found, freshly dead, within the 8 ft. diameter " corral " we had constructed for their protection. Death may have been due to the crushing force of a parent Screamer's foot. Currier removed the other chick immediately, and hand-raised it in our incubator house. This survivor appeared to be flourishing on a diet of grass (which was consumed in prodigious quantities), high protein meal, and mineral supplements. It was found dead on the morning of 11th December. We certainly hated to lose the little fellow ! Mr. Currier has hope that the parents will attempt another nesting in the near future as they have mated several times since the loss of their young."

* * *

Members will wish to congratulate very heartily Alec Guinness on the Knighthood that was conferred on him in the New Year Honours List.

* * *

Warmest congratulations, too, to Major E. F. Housden on the award of an O.B.E. It is interesting to note that he now joins his brother Dr. Leslie Housden who already has an O.B.E. They are, of course, sons of the late J. B. Housden, one of the fifty-two Original Members of the Society and first Auditor. The third generation of the family is represented by Dr. Leslie's son Edwin, at present a District Officer in Barotseland Protectorate.

A. A. P.

* * *

# REVIEWS

CAGE BIRDS IN COLOUR. By J. J. YEALLAND. H. F. and G. Witherby, Ltd., London, 1958. Price 9*s*. 6*d*. net.

The title-page of this book is somewhat misleading for it was translated and adapted from the Danish text written by G. Mandahl-Barth ; the name of the translator is not mentioned. The illustrations, all in colour, are from paintings by Henning Athon and 157 species are depicted ; the majority show males in breeding dress, but in a number of species the females are also included. A general dissertation on the care of cage-birds is followed by notes on the species under review ; these include a description of the range and habitat, and food, nests and eggs in the wild with some information concerning the birds in captivity.

This book is attractively presented and the process used for the illustrations is most effective.

P. B-S.

A STUDY OF BLACKBIRDS. By D. W. SNOW. George Allen and Unwin, Ltd., London, 1958. Price 21*s*. net.

Dr. Snow has for four years made a close, thorough, and comprehensive study of the Blackbirds in the Oxford Botanic Garden, an area which is urban at one end and almost rural at the other. As he states in the introduction to his book *A Study of Blackbirds*, during this time he was able to collect information on nearly a hundred colour-ringed birds of each sex living in or near the Botanic Garden, and, of these, the histories of about forty birds of each sex were recorded in some detail.

It is specifically stated that the book does not set out to be a monograph, but it certainly contains a wealth of information about this familiar bird and deals with plumage and moults, food and feeding habits, threatening and fighting, pair-formation and pair-bond, and care of the fledged young, to mention only a few aspects. In the chapter on " Breeding Success " Dr. Snow mentions the various hazards to eggs and young and found that exactly 50 per cent of the nests started in the Botanic Garden and immediate surroundings produced fledged young. Carrion Crows were the chief enemy, but cats not so serious, and the author mentions that, though this was not the case in the Botanic Garden, small boys are important egg-predators of suburban Blackbirds in some areas.

The illustrations, by Robert Gillmor, whose work is already known to the readers of the AVICULTURAL MAGAZINE, are delightful.

P. B-S.

* * *

ENCOUNTERS WITH ANIMALS. By GERALD DURRELL. Rupert Hart-Davis, London, 1958. Price 16*s.* net.

This book is mainly a collection of amusing and sharply observed glimpses of some of the more curious creatures occurring in the continents of Africa and America. It is divided into four parts, background for animals, animals in general, animals in particular, and the human animal. The first part contains accounts of the succession of life observed respectively in the " Black Bush " of West Africa and the Lily-Trotter Lake in British Guiana and includes an entertaining description of the way a Jacana mother protected her brood from a Cayman. The second part deals with animal courtships, animal architects, animal warfare, animal inventors, and vanishing animals. Aviculturists will find the descriptions of courtship in the King Bird of Paradise and the Satin Bower-bird of special interest, also the chapter on animal architects and the way some of the more remarkable birds' nests are constructed. As might be expected, the greater part of the book is concerned with mammals, but these charming stories will appeal to naturalists of all kinds as well as to the general reader. The excellent illustrations are executed by Ralph Thompson.

E. H.

* * *

# CORRESPONDENCE

## MANED GEESE

I was most interested to read Mr. J. C. Laidlay's article in the recent issue of the Magazine, more particularly as I was one of the many people who were not lucky enough to acquire a pair of the goslings.

One of his remarks has given me food for thought and might well provoke discussion among those of us who keep waterfowl. I quote : " waterfowl usually do not breed successfully when closely related and if the practice is continued over a period of years, complete infertility results."

It is well known that wild geese in a state of nature tend to remain in family parties in between breeding seasons. That is to say the Pink-foot goslings hatched last spring will have migrated south with their parents and will remain with them, barring accidents, until next spring when the old pair return north to start another family. It would, therefore, appear very likely that in the wild state a large number of pairs are, in fact, brother and sister. It would be most interesting to have the Wildfowl Trusts' view on this point.

It must surely be the case also that when one acquires a pair of ducks or geese (I am speaking only about the ornamental varieties, not domestic breeds) from one of the establishments which breed them, it will be the rule rather than the exception that a brother and sister pair will be sent. In the rarer species, like Maned Geese, where very few are bred each year, this must surely be self-evident.

I shall be most interested to hear any comments from other members on these points.

A. W. E. FLETCHER.

UNDERCLIFF,
136 CHESTER ROAD,
HELSBY, CHESHIRE.

## COLOURS OF MALE AND FEMALE WHITE-CAPPED REDSTART, LOSS OF RED COLOUR BY BIRDS IN CAPTIVITY, FOOD FOR LORIKEETS

I have just read Dr. Searle's most interesting letter in our Magazine. I can assure him that the cock and hen White-capped Redstart are alike in plumage. I watched a pair of these lovely birds feeding their young in a nest among rocks by the side of a mountain stream at a place called Gulmarg above Srinagar in Kashmir, and both birds appeared alike, but what a pity to keep these lovely birds in captivity at all.

In Dr. Vevers' letter on the loss of red colour by birds in captivity, I was particularly interested in the statement that some red browns owe their colour to melanins for Red Avadavats sometimes go black in captivity, but how can we keep the red? Many years ago I wrote a letter to our Magazine on melanism in Avadavats in captivity. So far as the loss of red in Bulbuls is concerned, does not the correspondence show how unwise it is to generalize and say "Bulbuls do or do not lose their red in captivity". I must have seen hundreds of Red-cheeked Bulbuls wild and have kept many in captivity and my experience is that the red on the cheek of the Bulbul becomes lighter and the area of colour smaller in birds kept in cages. It would probably help members if Mr. Boosey would tell us the conditions under which he kept his Bulbuls and the food he gave them. Also my experience is that when wild the feathers on the vent, or the seat of the trousers, of Red-cheeked Bulbuls is not red at all but a lovely deep salmon and that colour also faded in captivity. Will Mr. Boosey tell us whether the red on the seats of his Bulbuls' trousers is red or scarlet or a deep salmon? It may have been the bright Indian sunlight which coloured my vision.

Further, have members noted how the orange on the face of the Orange-cheeked Waxbill fades both in area and in colour in captivity? Mine when first imported really deserved their name. The orange on the face looked like orange sealing wax, yet after the moult, though kept in an outdoor aviary, the orange faded into a small area of brown and I saw the same thing in the case of Orange-cheeked Waxbills in the bird house in the London Zoo. What is Mr. Boosey's experience in this matter?

I was also very interested in the account of the breeding of the Yellow-backed Lory. Mr. Risdon writes that every conceivable variety of food was offered. I remember many years ago in an article on the breeding of Swainson's Lorikeets, Dr. Amsler describes how he fed his birds in war-time, the 1914 war, on ground rice pudding made with milk and honey-sugar. I used to get this rice mould made by our cook in India, though with brown sugar instead of honey-sugar, and I reared successfully some Blue-winged Parrakeets which would have died if reared on the ordinary satto or gram flour which food rears the Ring-necked successfully. Dr. Amsler's article is well worth reading.

GODFREY DAVIS.

BERESFORDS,
BOUGHTON MONCHELSEA,
NEAR MAIDSTONE, KENT.

## THE USE OF ANTIBIOTICS IN THE TREATMENT OF ENTERITIS

Following our recent correspondence in the Magazine in respect of enteritis I have had a further letter from Professor Kirkpatrick in which he points out that one of the statements contained in his letter in the November–December, 1958, Magazine, has, in the light of some information recently published been rendered incorrect and he feels that the correction should be drawn to your attention.

He states :—

"In the *Journal of Wildlife Management*, 22; 446–449, appears an article, 'Ulcerative Enteritis in the Pheasant, Blue Grouse, and California Quail,' by Buss, Conrad and Reilly. The new fact is that enteritis was found in a flock of young pheasants densely concentrated at the New York State Delmar Game Farm. Until this report, we did not know that pheasants were susceptible."

W. M. SANDS.

"SILVER BIRCHES,"
FARRAR LANE,
ADEL, LEEDS, 16.

## THE LOSS OF RED COLOUR BY BIRDS IN CAPTIVITY

Recent correspondence on the subject of loss of red colour by birds kept in captivity leads me to write of my own experience with Choughs (*Pyrrhocorax pyrrhocorax*). It is well known that in the case of wild adults the bill and legs are bright red. When I first started keeping Choughs, my specimens were fledglings which, of course, lacked the red colour, the soft parts being a brownish black, with a trace of yellow. As the birds matured, a dull red colour was assumed, but it never approached the intensity of red characteristic of the species.

My attention was drawn to this by the intense colour of birds exhibited in the National Cage Birds Show, which, incidentally, are almost always over-coloured and also the bills are usually overgrown. I wrote to one or two of the exhibitors and was informed that red pepper was included in their diet.

My birds were eighteen months old when I commenced adding small amounts of red pepper to their food. The birds soon developed a rich red colour of the soft parts, which quickly surpassed the natural depth of colour, taking on a decidedly purple cast. This unnatural tint waned when the food was discontinued but to make quite sure that the development of the red colour was not an age factor coincident with my colour feeding, no more colour food was fed for twelve months. Very slowly the intense red faded giving place to the previous dull red colour level. I might add that during the breeding season, just after colour feeding, a nest was built by the birds, but no eggs were laid. During the subsequent winter one bird died.

The red colour did not reappear during the next breeding season, but again a nest was built. Colour feeding was recommenced, and the rich hue returned after a few weeks. Uncertain as to whether or not the colour food was harmful to the birds I discontinued feeding it, which was followed by a gradual loss of colour. It now happened that a second bird died, after being ill for some time, steadily losing strength, despite the fact that the body condition seemed good. Shortly after, another bird became very unwell, wheezing to such an extent that its whole body vibrated and an audible rattle could be heard as the bird gasped for breath, during which time the bill was held partially open revealing saliva bubbling in its throat. In my opinion it had no hope of recovery. As a " kill-or-cure " measure I immediately started colour feeding once more, when to my surprise a rapid recovery was made. Coincidence ? Perhaps.

However, I now include red pepper mixture regularly in the diet and so far have had no more casualties. The amount is limited to just sufficient to maintain a normal degree of coloration. As a matter of convenience my three Fieldfares have the same staple diet and are remarkably healthy. This season they were actually carrying nesting material. Their bills tended to develop a slightly rosy flush when the colour food concentration was high, but were otherwise completely normal. My Virginian Cardinals have access to this food and have nested for the past four years although no young have reached maturity. The red colour of the male, although not as brilliant as a wild bird, is, nevertheless, rather better than one frequently sees in specimens which have been captive for some years.

From the foregoing I conclude that the feeding of capsicums to Choughs is definitely beneficial and, of course, does produce a natural degree of coloration if used judiciously. I have ascertained that the red pepper mixture which I use contains 45 per cent Spanish red pepper and 45 per cent paprika, which is a rich source of vitamin C. I would endorse the comments of Dr. H. Gwynne Vevers that the myth that red foods produce red colours is quite false, *unless* they contain substances which are either the pigments found in the birds or substances from which these pigments or similar ones can be synthetized by the bird's system. Clearly, wild Choughs do not have access to capsicums and I would be very interested to know what food source supplies these requirements in nature.

14 Heath Road, Ipswich. Brian C. Turner.

## THE WHITE-CAPPED REDSTART

Dr. K. C. Searle asks for information on the White-capped Redstart (*Chaimarrhornis leucocephala*). This bird is also known as the White-capped Water Redstart, for it frequents streams in the Himalayas and western China. Whistler says that it breeds at elevations between 6,000 feet and 16,000 feet, descending to the foothills for the winter. The sexes are alike in plumage.

Zoological Society of London. J. J. Yealland.

R. P. R. McGLASHAN, c/o Shell Co. of W.A. Ltd., Private Mail Bag 2052, Lagos, Nigeria. Proposed by H. Stiven.

JOHN L. McKEAN, M.R.A.O.U., 5 Hoyt Street, Hampton S. 7, Victoria, Australia. Proposed by A. A. Prestwich.

J. L. D. NICOLLE, Box 38, Bindura, Southern Rhodesia. Proposed by O. E. Clements.

RALPH PRETORIUS, P.O. Box 40, Bethanien, South-West Africa. Proposed by Miss K. Bonner.

Mrs. JOYCE PRICE, 8 Sweetbriar Road, Port of Spain, Trinidad, B.W.I. Proposed by A. A. Prestwich.

HECTOR PRYCE, 8 Dolerw, Welshpool, Mont. Proposed by R. P. Bufton.

H. C. REIJN, Lingeweg 21, Drumpt bij Tiel, Holland. Proposed by A. Rutgers.

RICHARD A. RICHARDSON, "Hill-Top," Cley, Holt, Norfolk. Proposed by Derek Goodwin.

Mrs. C. ROCHFORT-BOYD, Couchman Green, Staplehurst, Kent. Proposed by A. A. Prestwich.

HENRY RUSELER, 3504 So. 3rd East Street, Salt Lake City 15, Utah, U.S.A. Proposed by Calvin Wilson.

C. SOWERBY, 21 Springhead Avenue, Willerby Road, Hull, E. Yorks. Proposed by Miss K. Bonner.

STANLEY G. STONE, 38 Bain Terrace, Trevallyn, Tasmania. Proposed by Miss K. Bonner.

G. SWANEPOEL, P.O. Box 51, Bethanien, South-West Africa. Proposed by Miss K. Bonner.

ALBERT WINSTON TANSLEY, "Sundown," Bournebridge Lane, Stapleford Abbotts, Essex. Proposed by Miss K. Bonner.

CRAIG TWADDLE, Box 491, P.O. Mildura, Victoria, Australia. Proposed by A. A. Prestwich.

Dr. JOÃO DE MELLO ULRICH, Rua Dr. António Martins 5, Estoril, Portugal. Proposed by Dr. C. Fernando Costa.

Mrs. E. N. T. VANE, "Fairacre," Chiltern Road, Ballinger, Gt. Missenden, Bucks. Proposed by Miss K. Bonner.

B. H. VEERASAWMY, c/o Paignton Zoological and Botanical Gardens, Primley Park, Paignton, Devon. Proposed by J. J. Yealland.

HORALD V. WATSON, Al-Wat Aviaries, P.O. Box 275, Hull, Texas, U.S.A. Proposed by A. A. Prestwich.

JOHN GRAHAM WHEELDON, Residential School, Llandrindod Wells, Radnor. Proposed by R. P. Bufton.

## NEW MEMBERS

The nineteen Candidates for Election in the November–December, 1958, number of the AVICULTURAL MAGAZINE were duly elected members of the Society.

## DONATIONS

(Coloured Plate Fund)

| | £ | s. | d. |
|---|---|---|---|
| J. SPEDAN LEWIS | 5 | 0 | 0 |
| "Alpha" | 3 | 3 | 0 |
| S. MURRAY | 2 | 0 | 0 |
| E. A. TICKLE | 2 | 0 | 0 |
| Mrs. J. DALZIEL BIRRELL | 1 | 0 | 0 |
| Mrs. ROSE HUGHES | 1 | 0 | 0 |
| Lt.-Col. H. W. CLAYDEN | | 15 | 0 |
| W. G. CONWAY | | 15 | 0 |
| Mrs. J. W. FLINTOFT | | 15 | 0 |
| JOSHUA Z. HOWELL | | 15 | 0 |
| JACK BERLIN | | 10 | 0 |
| J. G. SCOURFIELD | | 10 | 0 |
| NEWTON R. STEEL | | 10 | 0 |
| A. G. THOMAS | | 10 | 0 |
| Mrs. J. S. GOODBRAND | | 7 | 6 |

## MEMBERS' ADVERTISEMENTS

*The charge for Members' advertisements is* THREE PENCE PER WORD. *Payment must accompany the advertisement, which must be sent on or before the 15th of the month to* A. A. PRESTWICH, 61 CHASE ROAD, OAKWOOD, N. 14. *All members of the Society are entitled to use this column, but the Council reserves the right to refuse any advertisements they consider unsuitable.*

### FOR SALE

Turquoisine cocks, 1958 home-bred, vigorous, or would exchange for hens or Splendid cocks :—Captain D. MITCHELL BENVIE, Heughhead, Friockheim, By Arbroath, Angus. Tel. : Friockheim 253.

Golden-mantled Rosella hen, £15 ; pair Bourkes, £27 10s. :—BERNARD DITTRICH, Reimill Aviaries, Cookham Rise, Maidenhead, Berks. Tel. : Bourne End 828.

For Indian birds buy direct from K. L. Acooli and Sons, Post Box 12008. Calcutta-2, India.

### WANTED

Superb Spreo Starling hen ; pure 1958 Golden-mantled Rosella hen ; true pairs Blue-faced Parrot Finches.—Captain D. MITCHELL BENVIE, Heughhead, Friockheim, By Arbroath, Angus. Tel. : Friockheim 253.

Two Rock Pebbler hens.—Dr. K. G. ROTHWELL, 51 Lutterworth Road, Leicester. Tel. : Leicester 32258.

Splendid Grass Parrakeet hen.—BERNARD DITTRICH, Reimill Aviaries, Cookham Rise, Maidenhead, Berks. Tel. : Bourne End 828.

Hen Stanley Parrakeet ; Neville Cayley's *Australian Parrots ; Aviculture*, Vol. 1.—R. T. KYME, King Street, Kirton, Boston, Lincolnshire.

---

### WATERFOWL RINGS

Members are reminded that the Society's special blue rings are always available. All Waterfowl in collections, both public and private, should carry them.

*Revised prices*

| *Size.* | | *Price per dozen, post free.* s. d. |
|---|---|---|
| 2–3 | Teal . . . . . | 4 0 |
| 3 | Wigeon . . . . . | 4 9 |
| 4 | Mallard, Pintail, etc. . . . | 5 6 |
| 4–5 | Smaller geese . . . . | 6 3 |
| 5 | Greylag . . . . . | 7 0 |

Requests for rings should be addressed to the Hon. Secretary, Avicultural Society, c/o Zoological Society of London, Regent's Park, London, N.W. 1, from whom all particulars can be obtained.

---

### POST-MORTEM EXAMINATIONS

Attention is drawn to the following rules :—

1. All birds to be addressed to the Pathologist, Zoological Society of London, Regent's Park, London, N.W. 1.

2. A brief account of the illness should be sent and, in addition, it should be stated *what other birds are kept on the same premises.*

3. Enclose full name and address and telephone number, so that the owner may be informed urgently of what action to take in case of infectious disease, or contacted if further information is required.

4. Fees are based on the amount of work done. The basic fee for a single post-mortem examination is 10s., but bacteriological and other laboratory tests are charged extra. Where more than one bird is sent at the same time the fee is not necessarily as much as 10s. per bird.

5. No body or skin of any bird will be returned under any circumstances whatever.

ARTHUR A. PRESTWICH,
*Hon. Secretary.*

STEPHEN AUSTIN AND SONS, LTD., PRINTERS, HERTFORD.